

## **Abstract (Currently amended)**

Combination metal-dielectric microwave probes are sliding on the central conductor of an electro-mechanical microwave two-probe load pull tuner and create higher reflection factor over a wider frequency bandwidth than was previously possible using pure dielectric probes. The microwave probes are made of a combination of metal and dielectric materials in form of a square metallic slug body with a dielectric cylindrical core embedded inside. The cylindrical dielectric core also guides the probes and allows them to slide smoothly on the central conductor of the tuner airline without major alignment. The probes are positioned horizontally using a remote translation mechanism and allow continuous coverage of the Smith chart over a high frequency and VSWR (reflection factor) range. The mutual horizontal distance between the probes determines the amplitude of the reflection factor, whereas their common distance from the tuner test port determines its phase.